

***National Type Evaluation Program***  
***Certificate of Conformance***  
***for Weighing and Measuring Devices***

**For:**

Bench Scale, Top Loading Balance  
Digital Electronic  
Models: HF-200, HF-200G, and HF-200GD  
 $n_{\max}$ : 21 000  
Capacity: 210 x 0.01 grams  
Platform: 120 mm Diameter

Accuracy Class: II

**Submitted by:**

A & D Engineering  
1555 McCandless Drive  
Milpitas, CA 95035  
Tel: (408) 263-5333  
Fax: (408) 263-0119  
Contact: Jerry Wang

**Standard Features and Options**

Model HF-200 and Model HF-200GD have the following externally selectable units using the "mode" key:  
gram, ounce, pound, troy ounce, pennyweight, metric carat, grain; momme, tael (Hong Kong, Singapore, Taiwan, and China); and tola (India)

Model HF-200G is gram mode only

"The counting feature is not legal for trade" is labeled on the front of the scale

Counting and percent weighing on Model HF-200 only

Semi-automatic zero with motion detection

Automatic zero setting mechanism

Gravity correction capability

AC power adapter

Level indicator

LCD display (Liquid Crystal Display)

"Lb" display to indicate low battery

**Option:** Rechargeable battery pack

Temperature Range: 5 °C to 40 °C (41 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 15, 1997

\_\_\_\_\_  
Gilbert M. Ugiansky, Ph.D.  
Chief, Office of Weights and Measures  
Issue Date: October 16, 1997

**Note:** The National Institute of Standards and Technology does not "approve," "recommend," or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product by the Institute. (See NTEP Policy and Procedures.)

**A & D Engineering**  
**Bench Scale, Top Loading Balance**  
**Models: HF-200, HF-200G, and HF-200GD**

**Application:** General purpose top loading balances. The scales are suitable for use as a jewelers or grain test scale, except for GIPSA (formerly FGIS) grain grading applications. Some weight units may not be suitable for all types of measurements. The tael, tola, and momme are foreign units intended to weigh precious stones.

**Identification:** The manufacturer's identification, model number, and serial number are on a pressure sensitive, self-destructive label located on the right side of the scale.

**Sealing:** The scales can be sealed using a pressure sensitive or a wire security seal applied to the upper and lower case to prevent access to an internal calibration switch.

**Test Conditions:** The HF-200 was submitted for evaluation. The emphasis of the evaluation was on device design and performance. The scale was tested over a voltage range of 100 to 130 VAC and 10.8 to 13.6 VDC. Influence factor tests were conducted over a temperature range of 5 °C to 40 °C (41 °F to 104 °F). Additionally, a load of one-half capacity was placed on the scale more than 100 000 times. The HF-200G and HF-200GD scales were included with this evaluation since they are identical to the HF-200 except for the units and setup configuration.

The results of the evaluation and information provided by the manufacturer indicate the devices comply with applicable requirements.

**Type Evaluation Criteria Used:** NIST Handbook 44, 1997 Edition

**Tested By:** Norman Ingram (CA)